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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,082	05/09/2001	Teruyasu Watabe	R2184.0079/P079-A	2774

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EXAMINER

PSITOS, ARISTOTELIS M

ART UNIT	PAPER NUMBER
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2627

DATE MAILED: 07/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/851,082	Applicant(s) WATABE, TERUYASU	
	Examiner Aristotelis M. Psitos	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-15 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2627

DETAILED ACTION

Applicant's response of 5/12/06 has been considered with the following results.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
1. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over the acknowledged prior art to JP 09-171631 further considered with Noda et al and all further considered with JP 11-096576.

The following analysis is made.

With respect to claim 1, as acknowledged by applicant's description of the prior art JP -9-171631, such a system provides for the a laser power control system in this environment with respect to the bottom-level drive as it relates to both the peak power and the erase power.

The examiner interprets this as the apc mode (automatic power control loop), sometimes referred to as the automatic laser power control. Further as noted in the accompanying MAT (machine assisted translation) of the document – starting at paragraph 8, the laser drive signal is appropriately "incremented".

There is no clear identification that there is another or as claimed "special" power setting process".

Art Unit: 2627

Noda et al teaches in this environment a different operational consideration for lasers, see his discussion as recited in the abstract.

It would have been obvious to modify the acknowledged prior art with the above teaching from Noda et al; motivation is to include an additional laser power control loop/process to ensure proper laser power.

Furthermore, the newly cited JP 11-096576 document further teaches in this environment the ability of establishing/calculating differential efficiency (η), which the examiner interprets as meeting the claimed "derivative efficiency".

It would have been obvious to modify the above acknowledged prior art system and Noda et al with this additional teaching, motivation is as acknowledged by the JP 11-096576 (see attached MAT).

Response to Arguments

Applicant's arguments filed 5/12/0 have been fully considered but they are not persuasive.

I Applicant argues that the JP '631 reference does not:

a) disclose/teach the semiconductor laser and current driver as recited.

The examiner respectfully disagrees for the reasons stated in the previous OA, i.e.,

----- In response thereto, the examiner again refers to the MAT (machine assisted translation) of the JP document, and starting at paragraph 8 thereof, the designated various plural currents are "superimposed" and hence the examiner interprets such as the claimed "increment currents", since as discussed therein, these currents are superimposed accordingly hence they are increment currents.

With respect to the detection unit, again, referring to the MAT of the JP document, detection of the power signal is found – see the description of the operation of figure 1 for instance, wherein the examiner interprets elements 2, 3, and the sampling elements 7/11/14 as such.

Applicant then argues that he has not acknowledged this JP document as teaching or suggesting

" 'such a system provides for a laser power control system in this environment with respect to the bottom-level drive as it relates to both the peak power and the erase power.' "

Art Unit: 2627

The examiner regrets any miscommunication to applicant, this is the examiner's characterization of the above acknowledged prior art JP '631. The examiner maintains such characterization since such follows from the descriptive nature as found in paragraphs 26 & 27 in the PGPub 2002/0018419A1 (the PGPub equivalent of the present application) and from the examiner's interpretation of the above JP document from the MAT (machine assisted translation) thereof. The examiner regrets that no MAT was provided to applicants in the previous OA. Attached hereto is one. -----

The currents are selectively outputted/sent to the laser driver – else as noted in the description – both in the present application and in the MAT.

Although the examiner regrets applicant's inability to understand the MAT – since the principal reference is in the same language as applicant it would appear that applicant should have no difficulty in understanding such. Hence the examiner maintains his reliance upon the MAT.

The examiner interprets paragraph 006 – through 67 as descriptive of an automatic power control capability. The examiner has indicated that the "special power setting process" is not clearly depicted/found in the JP 09-171631 document, and hence relied upon the reference/system as disclosed in Noda for teaching such a "special " power setting process.

b) With respect to the secondary reference/Noda, it is relied upon for the reasons stated above.

The examiner can appreciate applicants' disclosed "special power setting process"; however, the claimed phrase and function is interpreted as being taught by the Noda reference.

Noda is in the laser diode environment and provide protection thereof by monitoring various criteria. The examiner interprets this as the same environment – since without the laser and driver thereof, applicants system would not operate.

c) Applicant argues that the JP '576 fails to remedy the above noted documents. Also, the JP '576 fails to teach/suggest the current driver and function thereof.

Art Unit: 2627

Again, the examiner did not/does not rely upon the JP '576 document for such, but rather for the position stated above in the rejection.

The position is maintained.

Claim Rejections - 35 USC § 103

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over either Shigemori considered with Miyagawa et al and all further considered with JP 11-096576, or alternatively Miyagawa et al considered with JP 11-096576.

The following analysis is made:

Claim 1	Shigemori	Miyagawa et al
An optical recording/reproducing apparatus for	abst &	abst &
recording a sequence of data blocks onto an	col 3 line	col 3 line 52 to
optical recording medium by using a laser	41 to col. 6	col. 9 line 16
driving current waveform to control emission	line 30	

of a laser beam by a semiconductor laser
and for reproducing the data blocks from
the medium, the waveform including a
sequence of mark and space data portions
each having a data length that corresponds
to a multiple of a period of a channel clock
based on a recording data modulation
method, the optical recording/reproducing
apparatus comprising:

a semiconductor laser driver supplying a selected	inherent	element 600
one of a plurality of drive currents,		

Art Unit: 2627

including at least a first-level drive current
and a second-level drive current,
to the semiconductor laser to control
the emission of a laser beam by the laser;

a current driver selectively outputting	elements	elements
one of a plurality of increment currents to	4,5,6,7,8	7,8,9,11,12,13
the laser driver in response to control signals,		
the plurality of increment currents	see below	
including a first increment current supplied		
to the laser driver during an automatic		
power control process and a second increment		
current supplied to the laser driver		
during a special power setting process;		

a detection unit detecting a first power	elements	elements
sample signal, at a first sampling point of	2,3,17,18,24,25	1,2,4
the waveform, from the laser beam emitted	and operation thereof	
when the first increment current is supplied		
to the laser driver, and the detection unit detecting		
a second power sample signal, at a		
second sampling point of the waveform,		
from the laser beam emitted when the second		
increment current is supplied to the laser driver; and		

a calculation unit calculating a derivative efficiency	element 12	element 3
of the laser based on the first	and secondary refs.	

Shigemori teaches in an optical disc drive environment the ability of variable controlling the current supplied to a laser/diode by appropriate/selectively switching currents as desired. The examiner interprets these currents as increment currents since they are all superimposed accordingly.

It would have been obvious to modify the base system of Shigemori with the above additional apc capability, motivation is to ensure stabilized laser drive currents for proper recording.

It would have been obvious to modify the combined teachings of Shigemori and Miyagawa et al with the additional teaching from JP 11-096576, motivation is as discussed in the JP document so as to properly drive the laser currents.

The JP 11-096576 system teaches in this environment the ability of having appropriately controlled diode drive current by calculating differential efficiencies. See the abstract as well as the entire MAT (machine assisted translation).

Art Unit: 2627

It would have been obvious to modify the system of Miyagawa et al with the additional teaching from JP 11-096576, motivation is as discussed in the JP document so as to properly drive the laser currents.

Response to Arguments

Applicant's arguments filed 5/12/06 have been fully considered but they are not persuasive.

Applicants arguments against the use of the reference to Shigemori is misplaced – see MPEP § 706.02 (f) (1) section III – entitled flowcharts for 35 USC 102 (e) dates – right hand section, as well as MPEP § 706.02 (l) (1) p with respect to the fact that the amendment to 35 USC 103 (c) (1) Does not affect any application filed before November 29, 1999.

3. Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 1 above as stated in paragraphs 1 and 2, and further in view of Yokoi et al.

As noted by applicant, the base system supplies the appropriate signals for subsequent use in his laser power mode. The ability of providing a variable increment of the erase signal is considered to be present. Nevertheless, the ability of switching between various erase current sources is not clearly depicted, i.e., providing for a sample of the current signals.

Yokoi et al teaches in this environment the ability of switching between a plurality of signal sources to drive a laser accordingly –see figures 6-8, 10-17, wherein the examiner interprets the various erase signal(s) from the appropriate current source and hence shortening the tail edge – as further noted in figure 2 of Yokoi et al

It would have been obvious to modify the base system as relied upon above in paragraph 1 with the above noted switching/plural current sources taught by the Yokoi et al system so as to provide for the appropriate signal to drive the laser so as to shorten the tail edge.

With respect to the limitations of claims 3-6, such are considered met by the above combination of references, i.e., the switch – see Yokoi et al as he “switches” between his current sources.

The first and second states of claim 3 are considered to be those states requiring the increment of the amplitude, and as further recited/required for various data lengths in claims 4 and 24.

Art Unit: 2627

With respect to claims 5 and 6, the values of the signal level for the erase signal will alter, change – either be an increase or decrease – predicated upon the data signal length. Obviously these values must be included in a proper erase-level ----- range ---- (not rage).

Response to Arguments

Applicant's arguments filed 5/12/06 have been fully considered but they are not persuasive for the reasons stated above.

4. Claims 8, 10, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 1 as stated in paragraphs 1 and 2 above, and further in view of Yokoi et al.

With respect to these claims, the space-level limitations are interpreted as the data lengths described in Yokoi et al.

It would have been obvious to modify the references as relied upon above in paragraph 1 with the additional space-level and increment such accordingly so as to properly compensate the efficiency of the laser.

The similar interpretation of the limitations of claims 10 and 11 as stated above in paragraph two are made here as well.

Response to Arguments

Applicant's arguments filed 5/12/06 have been fully considered but they are not persuasive for the reasons stated above.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 8 above, and further in view of Gyo.

There is no clear depiction of "bias" currents in the above noted systems. Nevertheless, the ability of providing appropriate "bias" current sources in this environment is taught by the Gyo reference.

Art Unit: 2627

It would have been obvious to modify the references as stated above in paragraph 3 with the additional "bias" current sources, motivation is to use existing laser driving circuitry already established in this environment and hence save valuable resources such as design time required to re-design current driving circuits from scratch.

Response to Arguments

Applicant's arguments filed 5/12/06 have been fully considered but they are not persuasive for the reasons stated above.

6. Claims 12, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 1 above, and further in view of Yokoi et al.

These claims are drawn to the bottom-level currents. Although the acknowledged prior art describes such –as indicated in paragraph 115 of the present application, the Yokoi et al reference describes such as "cooling pulses" (c), where the incrementing of such is depict for Cf, C or Cr in figure 11 for instance.

With respect to claims 14 and 15, the documents are relied upon and interpreted as indicated above in paragraph 3.

Response to Arguments

Applicant's arguments filed 5/12/06 have been fully considered but they are not persuasive for the reasons stated above.

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 12 above, and further in view of Gyo.

Gyo is relied upon for the reasons stated above in paragraph 4.

Allowable Subject Matter

7. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

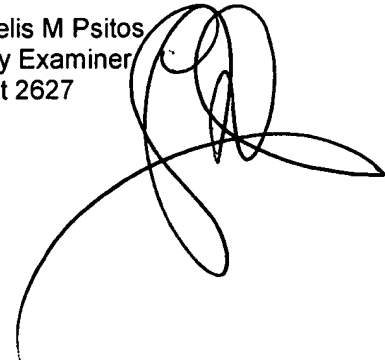
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aristotelis M. Psitos whose telephone number is (571) 272-7594. The examiner can normally be reached on M-F: 6:00 - 2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne D. Bost can be reached on (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2627

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Aristotelis M Psitos
Primary Examiner
Art Unit 2627

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke extending to the right.

AMP